

**ABSTRACT**

Stereoscopic display apparatus, includes two projectors having inputs connectable to a source of digital data representing the color components of two stereoscopic images, and outputs outputting two optical beams each having a set of color components of different polarization states; a polarization preserving screen; an optical filter system using exclusively optical retarders for transforming the polarizations of the optical beams outputted by the two projectors into two color sets, in which all the color components of one set are polarized in one polarization state, and all the color components of the other set are polarized in an orthogonal polarization state; and means for stacking the two color sets onto the polarization preserving screen, such as to enable stereoscopic viewing of the two color sets via orthogonally polarized filters. Some of the described preferred embodiments involve switching of one color component, e.g., the green color component, at the inputs to the two projectors. In some described embodiments, the optical filter system outputs two beams stacked onto the screen, whereas in other described embodiments, the optical filter system produces a single output beam applied to the screen.